

AMENDMENTS TO THE CLAIMS

1-12. (Canceled)

13. (Currently Amended) A method of cleaning a substrate of a liquid crystal display panel comprising:

a first step, moving the substrate continuously in a linear direction;

a second step, brushing a side surface of the substrate with a side surface of a cylindrical brush that rotates based on an axis of rotation, wherein the axis of rotation is substantially parallel to the linear direction of the substrate movement;

a third step, cleaning upper and lower surfaces of the substrate; and

a fourth step, jetting deionized water at high pressure that carries ultrasonic waves onto the side surface of the substrate,

wherein cleaning upper and lower surfaces of the substrate, and brushing the side surface of the substrate are simultaneously performed while the substrate is moving continuously in the linear direction, and

wherein the jetting of the deionized water is performed to the side surface of the substrate that the brushing of a side surface is completed.

14. (Canceled)

15. (Canceled)

16. (Previously Presented) The method of claim 13, wherein cleaning the upper and lower surfaces of the substrate comprises:

rotating cleaning brushes on the upper and lower surface of substrate.

17. (Canceled)

18. (Previously Presented) The method of claim 16, wherein the cleaning brushes are arranged at the upper and lower surfaces of the substrate, respectively.

19-22. (Canceled)

23. (Currently Amended) A method of cleaning a substrate of a liquid crystal display panel comprising:

a first step, removing foreign substances on a first side surface of the substrate by jetting deionized water at high pressure that carries ultrasonic waves onto the first side surface of the substrate with a first water jet device and brushing the first side surface of the substrate with cleaning brushes that rotate based on an axis of rotation while moving the substrate continuously in a linear direction; and

second step, removing foreign substances on the upper and lower surfaces of the substrate by brushing the upper and lower surfaces of the substrate with brushes,

wherein brushing the upper and lower surfaces of the substrate, and brushing the first side surface of the substrate are simultaneously performed while the substrate is moving continuously in the linear direction, and

wherein the jetting of deionized water is performed to the side surface of the substrate that the brushing of a side surface is completed.

24. (Previously Presented) The method of claim 23, wherein the water jet device causes vibration on the side surface of the substrate.

25. (Previously Presented) The method of claim 24, wherein the vibration is generated by ultrasonic waves.

26-27. (Canceled)

28. (Currently Amended) A method of cleaning a substrate having an upper surface and a lower surface separated by at least two opposing side surfaces, the method comprising:

a first step, moving the substrate continuously in a linear direction;

a second step, brushing at least two opposing side surfaces with cleaning brushes that rotate based on an axis of rotation along the at least two opposing side surfaces of the substrate in substantially a straight line;

a third step, cleaning at least one of the upper and lower surfaces; and
a fourth step, spraying water at high pressure that carries ultrasonic waves onto the at least two brushed side surfaces,

wherein cleaning at least one of the upper and lower surfaces of the substrate, and brushing at least two opposing side surfaces of the substrate are simultaneously performed while the substrate is moving continuously in the linear direction, and

wherein the spraying of water is performed to the side surface of the substrate that the brushing of at least two opposing side surfaces is completed.

29. (Previously Presented) The method of claim 28, further including brushing at least two opposing side surfaces before brushing at least one of the upper and lower surfaces.

30. (Previously Presented) The method of claim 28, wherein the water includes deionized water.

31. (Canceled)

32. (Previously Presented) The method of claim 28, wherein cleaning at least one of the upper and lower surfaces includes brushing the at least one of the upper and lower surfaces.

33. (Previously Presented) The method of claim 23, wherein removing foreign substances on a second side surface includes brushing the second side surface of the substrate with cleaning brushes that rotate based on an axis of rotation.

34. (Previously Presented) The method of claim 28, wherein the at least two opposing side surfaces are substantially parallel.

35. (Previously Presented) The method of claim 28, wherein the axis of rotation is substantially parallel to the linear direction of the substrate movement.

36. (Previously Presented) The method of claim 28, further including brushing at least one of the upper and lower surfaces before spraying water that carries ultrasonic waves onto the at least two brushed side surfaces.

37. (Previously Presented) The method of claim 28, further including brushing at least one of the upper and lower surfaces with a plurality of cleaning brushes arranged at each of the at least one of the upper and lower surfaces.

38-44. (Canceled)